Circulation of Pre-U.S. Mint Copper Coins in Nineteenth Century America

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The copper coinage struck under American State and Federal franchises in the period from 1785 through 1788 is often seen in low grade condition because of extensive circulation wear. This is also true of 1773 Virginia halfpence; of Nova Constellatio and other New York coppers dated from 1783 through 1787; of variously dated, American-made, English style, counterfeit halfpence principally originating from 1787 through 1789 at Machin's Mills mint near Newburgh, New York; and of genuine and counterfeit English and Irish halfpence dated 1782 or earlier found in America.[1] The natural wear in many instances indicates over half a century of normal use. Until the U.S. Mint in Philadelphia, beginning in 1793, made adequate quantities of U.S. cents and half cents available, the extended use of previously existing copper coin for circulation was to be expected, but for it to continue for decades thereafter seems somewhat surprising.

The overproduction of copper coinage in America by the middle of 1787 as well as the steady importation of English style coppers had dropped the circulating value in New York from 14 to 20 coppers to the New York money of account shilling and by the middle of 1789 from 20 to 60. Similar depreciation in copper coin value had occurred in other states temporarily.

As a consequence small size paper notes in pence denominatons were issued by cities, churches and merchants and used for small change purposes, primarily in the State of New York.[2] Then several years after the beginning of U.S. Mint coinage, the rise in the price of copper metal helped to restore mercantile confidence in copper coins and their acceptance was reestablished in some parts of the Middle Atlantic and northeastern states.

However a major mystery exists—on what valuation basis did other than U.S. Mint copper coinage circulate, in what localities and for what lengths of time? There appears to be almost a total lack of data on this subject. The public apparently was left to its own devices to handle the matter. The government did not seriously try to control such copper coins or to enforce their legislated elimination. The merchants and the news media did not seem to care enough to complain or to write about it. There were many more serious silver and gold coin problems to solve and those took precedence over copper coin standardization.

As is well known, the Constitution of the United States gave the federal government, in addition to the right to coin money, the power "to regulate the value thereof." It denied the States the power to give anything but gold and silver coin a legal tender status. The Mint Act of April 2, 1792 included two denominations of copper

coinage, designating a value of a cent for the larger and a half cent for the smaller, but did not give those coins any legal tender status as was done for all U.S. silver and gold coins and, soon thereafter, for many foreign silver and gold coins. It created no incentive or opportunity for the public to turn in copper or copper coin for new copper coinage as it did for silver and gold. The lack of a needed support system for copper coinage was promptly realized by Congress and the Act of May 8, 1792 was passed giving the Director of the Mint limited authority to buy copper metal for coinage and providing that when $50,000 in cents and half cents were coined and delivered by the Mint and six months notice of that event given to the public by the Secretary of the Treasury "no copper coins or pieces whatsoever, except said cents and half cents, shall pass current as money." From this legislation it is obvious from the use of the words, "copper coins or pieces," that Congress knew well the conglomeration of copper money and tokens then in circulation.

By the end of 1799, a $50,000 total had been reached and official requests for issuance of the notice were made on several occasions from 1800 to 1803 without result and the notice requirement was finally officially forgotten. President Jefferson, who was the last to be formally reminded of the matter by Treasury Secretary Albert Gallatin on April 9, 1803, responded the following day that because "the continuance of the Mint was uncertain and if put down, the concluding other coppers might be inconvenient." He then passed the buck to the legislative branch when he wrote that the required announcement should be delayed for more than a month so "that Congress may have time to interpose before the expiration of the 6 months allowed the copper circulation after the annunciation."[3] It is reassuring to note that Jefferson refers to the mass of pre-U.S. Mint pieces as "other coppers" and to their active use as "copper circulation." The coppers intended to be eliminated were not eliminated and neither Congress nor the Secretary of the Treasury accomplished anything further on the matter until the Act of February 21, 1857 was passed.

During the 1793-1857 period the price of copper fluctuated; the amount of copper metal in the cent and half cent was officially reduced on two occasions; the U.S. Mint was said not to have supplied enough copper coins; the future of the U.S. Mint was challenged in favor of foreign and domestic private contract coinage for the United States; the distribution of U.S. copper coinage was erratic; and its acceptance was somewhat unpopular. In spite of this the U.S. made a profit on copper coinage; was able to coin as many as 15,000 cents in one day; was able to and did produce 50 tons

of copper coin per year when needed; paid the shopping costs for sending cents and half cents to the Bank of the United States and its branches and to various other cities and towns; on January 3, 1799 had "a considerable number on hand;" and in 1821 the Director of the Mint reported that at the Mint "the quantity of copper coins had accumulated far beyond the public demand."[4]

U.S. copper coinage was not protected by the first U.S. coin counterfeiting law of April 21, 1806 but was eventually included in the counterfeiting law of March 3, 1825.

An early example of the sporatic public prejudice against copper coins was the rejection by the New York public of the Talbot Allum & Lee cents dated 1794 and 1795. These pieces were of a size and weight conforming generally to the Federal cent standard. They were beautifully coined in Birmingham, England and redeemable by a reputable New York business. Yet a very substantial portion of them had to be sold for copper metal value to the U.S. Mint which, instead of melting them to prepare new planchets, cut them down to a proper diameter for striking 1795 and 1797 half cents, even eliminating the rolling process.

Erastus Root, a member of the U.S. House of Representatives from New York, told that body on January 19, 1816 that the current coins in circulation were so deficient that they were "hardly accepted by servants in taverns." He must have been referring to copper coins as he promptly proposed, without success, a revision of the U.S. copper coinage laws.[5]

It was asserted that a half cent had so little value that it was unneeded. This was unsound. Admittedly half cent coinage for circulation was discontinued for two long periods from 1812 through 1824 and from 1836 through 1848, but due to unpopularity, not lack of value. If after about 150 years of price increases the public today constantly uses one cent coins, then a half cent had to have meaningful value then. To claim that our large cents were too heavy for convenience is also unsound when one compares that to the mixture of smaller non-uniform coppers which were in circulation for over a half century. The reason for continued circulation of pre-U.S. Mint coppers must therefore be sought elsewhere.

The 1830 Senate Report

A comprehensive report on the circulation of coins in the United States was submitted to the Senate on January 11, 1830, by Nathan

Sanford (1777-1838) of New York as chairman of a Select Committee of five senators appointed to revise coinage laws. Although primarily devoted to foreign and domestic gold and silver coinage, the report is very specific on the need for straightening out the copper circulation problems. Its numismatic timing is particularly significant because it is prior to the introduction into circulation of Hard Times Tokens and related large cent size store cards. It included recognition that, after 37 years of U.S. Mint copper coin production being added to the pre-U.S.Mint copper pieces, no solution to the small change problems had resulted.

Fundamentally the report pointed out that United States copper coinage never had any legal tender status and that it was uncertain as to whether there was any limit to the amount of copper which could be tendered in a payment. It emphasized that "our copper coins are either legal money, or they are not." To solve this issue it was proposed (Senate Bill 49 filed January 11, 1830) that U.S. copper coins become legal tender up to ten cents. This was to confine copper coins to "their proper province" for convenience in making small and exact payments.

Even though U.S. half dimes and dimes were already legal tender within the 10 cent limit, it was felt that such legislation would eliminate "burdening creditors with an inconvenient amount" of copper and satisfy the often made objection that the U.S. copper coin was "too heavy for the purposes of money." He continued that as to all non-Federal coins, both silver and copper, "when coins are so worn that their inscriptions and distinctive marks are effaced they have lost the character which they received from the mint...that coins reduced to disks of smooth metal are too inconvenient."

The main thrust of the report was that Spanish-American silver coins, reduced in weight by wear during 20 to 100 years of use and from "artificial diminishment," are customarily accepted by tale or count, regardless of weight, thus driving from circulation U.S. coins which are "not yet much reduced by ordinary use." It was estimated then that circulation of all coins in the United States was $23,000,000 of which $14,000,000 was of U.S. coinage (of $34,497,138 minted), $5,000,000 in Spanish-American pieces and $4,000,000 in other foreign coins. The amount of U.S. copper coinage in circulation was not commented upon because the circulation of U.S. silver could not even be stimulated when small Spanish-American silver coins, being underweight by an average of 6 percent, were for that reason forcing U.S. silver coinage out of circulation. Even though Spanish-American silver coins were usually

accepted by tale at par in trade,they could not be turned in to the U.S. Mint for recoinage without a party losing a large percentage because of their weight deficiency.

The importance of this report as to copper coin in circulation is the fact that no elimination of pre-U.S. Mint copper was even suggested, although it was intended that an increase in the circulation of U.S. Mint copper coins would occur by making them legal tender up to 10 cents. If Spanish-American silver coin, regardless of extensive wear and substantial loss of metallic value was then generally circulating by tale, there was no apparent urgency or logic to undertake a reformation of copper circulation, the intrinsic value of which as metal was normally as much as 50 percent below its circulating value.

The text and recommendations of the report were ordered printed and distributed but nothing whatsoever resulted. The lack of action on the report made it clear that the problem was too complex at that time for the government to solve.

The diminution in metallic value of small Spanish-American silver coins was recognized in 1843 in New York when the banks refused to accept such silver except at the rate of 23 cents (8 percent discount) for the 2 real, at 10 cents (20 percent discount) for the 1 real, and at 5 cents (20 percent discount) for the 1/2 real. This practice spread to banks, post offices and U.S. Land Offices throughout the United States by 1848.[6] The United States by its February 21, 1857, legislation finally accepted those coins by giving the holder a choice either to turn in the small Spanish-American silver coins without any discount in exchange for the new flying eagle small cents for a period of two years or to turn in such silver coins at a discount of 20 percent in exchange for U.S. silver or gold coin. Naturally virtually everyone elected the full-value option. The option to exchange for cents without any discount was extended to February 21, 1861, but was cut off on June 25, 1860 by repeal of the extension.

The Effect of Moneys of Account

The reason why many pre-U.S. Mint coppers remained in circulation through 1857 is somewhat clarified by certain monetary conditions mentioned in the 1830 report. The principal cause seems to be the use during more than the first half of the nineteenth century of money of account shilling and pence pricing and record keeping. In turn the continued circulation of Spanish-American silver

coinage in the United States helped to keep the several moneys of account in use in many areas. A review of these conditions should explain their effect on pre-U.S. Mint copper circulation.

In New York, for example, where the money of account was 8 shillings to the Spanish dollar of 8 reales (also equal to the U.S. Dollar), the New York money of account shilling was exactly the same value as the 1 real Spanish-American coin, 2 shillings exactly the same as the 2 real coin, and 6 pence the same as a 1/2 real coin. If the denomination of coins created under the laws of the United States were used for small transactions in New York money of account pricing, the shilling or 6 pence prices had to be recalculated at 12 1/2 cents or 6 1/4 cents respectively, for which it took at least four specific U.S. coins to make up the former and there was no U.S. coin combination to make up the latter. Only the 2 shilling amount and the U.S. quarter dollar coin were equivalent to one another, but many transactions involved smaller sums. So long as Spanish-American coins remained in circulation it was more convenient for many people to keep the shilling and pence exchange and price system than to change such prices into cent amounts.

The tenacity with which New York held to its money of account standard is well demonstrated by the fact that the New York shilling or 1/8th dollar equivalent became the trading price differential in 1792 when security brokers first organized in New York and today the New York Stock Exchange, the American Stock Exchange, etc., continue to trade with that price differential in spite of almost 200 years of a decimal monetary system. It has always been difficult to make people change an economic habit when the suggested change is or is perceived to be more inconvenient for them.

In New England, modifying its money of account equivalent of 6 shillings to the Spanish Dollar (which standard had been unchanged since 1750) was even more difficult to accomplish. In the New England money of account basis, 1 shilling was equal to 8 1/3 cents. A Spanish-American 1 real coin was equal to 9 pence in New England money of account. The State franchised coppers and genuine and counterfeit English-style halfpence had been circulated at 18 to the New England money of account shilling, equivalent to 15 coppers for 10 pence, 9 coppers for 6 pence, and 3 coppers for 2 pence. As complex as small transactions in New England might have been, no U.S. coin came close to coordinating with the New England money of account and the only available computer able to handle equivalents in such a money environment was a programmed human mind. The arithmetic primers and handbooks continued into the nineteenth century to drill the reader in the necessary conversion

calculations in this well developed money of account system. When one reached whole dollar sums there was no problem but for small transactions a system of sixths (shillings per Spanish dollar), eighths (reales per coined dollar), twelfths (pence per shilling), eighteenths (coppers per shilling), and hundredths (cents per coined dollar) would, when learned, be a matter of pride and a source of stubbornness against modification. Imagine a visitor from out of town going to the Faneuil Hall Market to buy food in the early nineteenth century and facing such a price and coin structure.

In Pennsylvania, New Jersey and Delaware (the Middle Atlantic States) the money of account at 7 shillings 6 pence to the Spanish Dollar was so well established from colonial times that neighboring Maryland was forced to conform to it as an economic practicality. In this system of 90 pence equal to the Spanish Dollar, there were no small U.S. or Spanish-American coins with which it could readily accommodate. However, New Jersey had tried by law and otherwise to stabilize the value of its own coppers at 15 to the money of account shilling which would enable 10 coppers to pass for 8 pence, and 5 coppers to pass for 4 pence. New Jersey coppers in New York had on September 5, 1789, fallen in value to 2 for the New York money of account penny (24 for the New York shilling), but at that time even 2 real, 1 real and 1/2 real Spanish-American silver coins were temporarily "depreciated into pistareens, half pistareens, etc.," amounting to a 20 percent discount. This demonstrated the effect of New York practices on neighboring areas, even though temporary.

The westward movement of American population spread the money of account habits and thus the coin circulating customs. The firmly established New England money of account had spread to Ohio and Indiana. The Virginia money of account, on the same basis (6 shillings to the dollar), had spread to Kentucky, Tennessee and Mississippi.[7] The southern states, however, had steadily refused to embrace copper circulation of any type and in what place the Virginia halfpence circulated was unknown to Thomas Jefferson and still remains a puzzlement as to its nineteenth century use.

Conversion of Cents into Pence

The 1830 Senate report confirmed that in some parts of the United States, prices were to a great extent expressed in four dissimilar types of shilling and pence moneys of account carried over from the

American colonial period and that "these discordant imaginary moneys though understood by the inhabitant of the local scene where it prevails" cause the value of U.S. coins to be converted to the various moneys of account by calculations involving small fractions.

For prices in pence the conversion of U.S. cent values into moneys of account was complex and impractical. Rounded off to the nearest farthing as well as exact conversion calculations were published in various forms beginning in 1793 and continuing for at least 35 years.[8] A selection of a few of the values is set forth hereafter for various moneys of account, showing both the true conversion amount as well as the rounded off tabular value to the nearest farthing. A calculation could be based on money of account farthings for a book entry, but the public could not make a small payment to the nearest farthing because there was no coin in circulation to do it with, not even the very occasional genuine or counterfeit English farthings. No one published conversion values which included that for a U.S. half cent.

In small transactions someone always gained and someone always lost when cents or half cents were converted to pay prices in money of account pence. If, however, in a transaction one U.S. cent was tendered to pay an obligation of one money of account pence there would be a loss to the receiver of 28 percent in New England, 10 percent in the middle Atlantic states and 4 percent in New York. Thus, a rejection of the use of a U.S. Cent for such a payment was justifiable, particularly in New England.

CENTS	NEW ENGLAND PENCE		NEW YORK PENCE		MIDDLE ATLANTIC PENCE	
	True Value	*Table Value*	*True Value*	*Table Value*	*True Value*	*Table Value*
1	.72	.75	.96	1.00	.90	1.00
2	1.44	1.50	1.92	2.00	1.80	1.75
3	2.16	2.25	2.88	3.00	2.70	2.75
4	2.88	3.00	3.84	3.75	3.60	3.50
5	3.60	3.50	4.80	4.75	4.50	4.50
6	4.33	4.25	5.76	5.75	5.40	5.50
10	7.20	7.25	9.60	9.50	9.00	9.00

As can be noted in these calculations there is a maximum deviation of as high as 10 percent, a deviation of 3 to 4 percent up or

down for transactions involving up to a few cents and an approach to equality in the larger amounts. It is not surprising that U.S. cents and half cents were unpopular in areas where prices in pence were prevalent.

Sometimes prices and wages were referred to in mixtures of dollars and cents along with money of account shillings and pence. Such a situation was published by *Hunt's Merchants Magazine* in August 1853 from a contemporary article in the *New York Herald* concerning industrial wages, stating: "the cost of a fine shirt varies from two dollars and a half to four dollars, while a coarse one can be purchased at almost any retail store for eight or ten shillings.... For finishing the shirt from twenty-five cents to a sixpence is paid."

Experiences and Comments

Commentary by early numismatists, including collectors, researchers and dealers, as to American circulation of other than U.S. Mint coppers confirms their long circulation but throws virtually no light as to the valuation basis on which they circulated. Those who wrote did so from their own knowledge or experience, even if from distant memory in some instances. Their remarks are important.

Montroville W. Dickeson, writing just prior to 1859 concerning 1787 Connecticut coppers, stated that "at this time, they can be occasionally found in circulation in every State of the Union, where a copper currency is tolerated." As to Virginia halfpence, he stated that those coppers "are frequently met with among those now in circulation." He then mentions some dug up in Knoxville, Tennessee and in Easton, Pennsylvania.[9] Crosby, writing about 1873, points out that Dickeson who lived in Philadelphia had "unequaled facilities" to obtain colonial coppers at the Philadelphia Mint where they were purchased for copper metal value.[10] Eckfeldt & DuBois, both of whom were officers at the U.S. Mint and were loyal to it, wrote in 1842 that State copper coinages continued current for an unknown period, but by 1842 coin collectors had gained possession of them.[11] *Dye's Coin Encyclopedia* stated in 1883 that coins of State mints and Bungtown coppers in circulation began to disappear "as so much rubbish," but did not completely drop out of circulation until the disappearance of metallic money during the Civil War.[12]

William C. Prime in his book entitled *Coins, Medals, and Seals, Ancient and Modern*, writing in 1860 about English halfpence then

in circulation in the United States (some of which had been sent to Massachusetts Bay Colony in 1749 as a payment by the British government), stated, "At the present day we find among the old copper in circulation many very fine specimens of English halfpennies of 1749, always in better condition than any other year. It may be owing to this importation that these coins remain in America in such fine preservation."[13] This confirms that pre-U.S. Mint British halfpence continued to circulate during more than the first half of the nineteenth century. As to Nova Constellatio coppers, Prime also stated in 1860, that "They are even now found occasionally in circulation."[14]

The numismatist, Horatio N. Rust (1828-1906), who discovered the five Fugio cent dies at the Broome and Platt store in New Haven, Connecticut in 1860, in his article entitled "The First Cent" for the *Pasadena (California) Daily News* of July 29, 1898, stated concerning the Fugio cent that "fifty years ago they were common in circulation." In a subsequent letter he wrote shortly thereafter from California he made a similar comment but added that the place of circulation of Fugio cents was "in New England." This places such circulation circa 1848 in New England.[15]

A similar remark on what was in circulation at that time was made by professional numismatist, John W. Haseltine, who in a 1908 talk said that in 1846 at the age of 8 he took a Fugio cent, a New Jersey copper and a Connecticut copper from his brother's collection and spent them for candy. He went on to say that "the Franklin or Fugio, New Jerseys, Connecticuts and sometimes Massachusetts cents, also many half cents circulated freely as money at that time." [16]

Lyman H. Low, a professional numismatist, commented in 1908 that in 1856 he made regular Saturday afternoon visits to the toll house on the Boston side of the Chelsea Ferry to look over a box of odd coins. He said "it was the custom of the tollman to accept anything having the semblance of a coin. If it proved to be something else than a piece of U.S. mintage it was thrown into the box."[17] Obviously these were being separated for financial advantage in making change rather than for numismatic purposes, as Low would not have continued to have had his choice if it were otherwise.

E.J. Attinelli writing in 1876 pointed out that Lorin G. Parmelee opened a bakery in Boston in 1849 at the age of 22 and that "his business naturally threw his way many copper coins, observing the oddity of many of these he commenced placing aside the early colonial pieces and the regular issues of the Mint." He confined his collection at that time almost entirely to copper coins.[18]

In *Mason's Coin Collectors' Magazine*, published in Boston in

November, 1884, an unusual experience of Ebenezer Locke Mason, Jr. (1826-1901), was described. His family had moved from Portland, Maine to Philadelphia in 1834. He was engaged in a travelling exhibition business in the United States and Canada from 1856 to 1859 prior to becoming a professional numismatist in Philadelphia in 1860. At the ticket offices of the halls and theatres where he exhibited, he gathered thousands of colonial, United States and other copper coins which he shipped to Philadelphia to sell to dealers on his return. On one occasion he sent by Adams Express a keg of old coppers in rolls of 25 coins each, consisting of two groups. One group contained 1793, 1799 and 1804 U.S. cents, colonial coins, Washingtons, uncirculated half cents and uncirculated cents of any date, these being rolled up in white wrappers. The other group consisted of "bungtowns and wretched coppers" (presumably genuine and counterfeit English-type halfpence, Hard Times Tokens and other American store cards, Canadian tokens, etc.), those being wrapped in brown paper. He instructed his wife by letter to spend for food those rolled in brown paper and to retain for him those enclosed in white paper. She made an error and paid out to shopkeepers and other market people the scarce pieces enclosed in white wrappers, saving the other rolls for him. Thus the pieces of numismatic significance were expended and those to be spent were still on hand. From this casualty to his economic welfare important conclusions can be drawn, namely:

a) Colonial coins, Washingtons, Bungtowns, and "wretched coppers" were still acceptable in trade in certain parts of the United States in 1856.

b) United States standard copper coinage was circulating concurrently with pre-U.S. Mint copper coinage in the many areas Mason frequented.

c) The circulating value of "Bungtown and wretched coppers" was greater in Philadelphia than in certain other parts of the country, otherwise it would not have been worthwhile for Mason to ship them to Philadelphia for expenditure by his wife.

Joseph B. Felt, writing in 1839, was referring to English style coppers and copper coins minted under American State franchises when he stated: "Now and then the remains of them have come forth and passed for a season, till driven back by new regulations."[19] Those "regulations" were adopted commercial practices. The comment indicated that pre-U.S. Mint copper coins returned to circulation from time to time when the price of copper metal increased sufficiently or merchants' whims changed or they would sometimes lose acceptance when the price of copper would be depressed or the

quantity of copper coin would become excessive. One could conclude that the value at which coppers circulated would remain the same in an area but that those coppers would be acceptable off and on, depending on the price of copper as a metal and upon other economic conditions. When the price of copper metal went high enough or when copper coin became unacceptable, then such coins would be driven from circulation into the melting pot as scrap.

It is of interest to observe that the obverse and reverse of the 1783 Washington & Independence cent are illustrated in some gold and silver coin chart manuals in the 1848 to 1855 period. This would indicate that this copper coin too was then in circulation. No other copper coins are included in these coin chart manuals. The description of the piece in one instance stated "One cent, of Washington's time" and in another "One cent (Washington's day) One cent."[20] Although this copper token was a British product of the 1820 period, it was obviously added to the pre-U.S. Mint coppers in circulation in the United States, as many examples are also found well worn.

Neil Carothers, Don Taxay, Robert Julian and many others have added extensively to the history of small coins circulating in the United States, but do not include evidence of the circulating value of pre-U.S. Mint coppers.

Conclusion

The fact that the money of account systems continued to be steadily used in parts of the United States until 1857 seems to be the main reason many pre-U. S. Mint copper coins remained in circulation even though they were steadily displaced and depleted.The small change habits of the public made it easier to calculate and make payments with pre-U.S. Mint coppers in small transactions in many money of account areas and to treat U.S. Mint copper coinage as foreign exchange because it did not fit into the established money of account systems. Such money of account systems were kept active by the large quantities of small Spanish-American silver coins which continued to remain in circulation. If such silver coins had been withdrawn from circulation earlier in the nineteenth century the money of account systems would have collapsed and consequently U.S. Mint coppers would have quickly become the coins used in small transactions.

The importance of eliminating the money of account systems was reconfirmed by James Ross Snowden, Director of the United States

Mint, in his report dated November 5, 1859, after the February 21, 1857 Act authorizing the exchange of Spanish-American silver coin had been in operation. He stated, "our circulation is thus being rid of a foreign currency, which interferes with our own excellent system of decimal coinage and accounts. It is hoped, that this reform in our circulation will lead people to adopt the language of our system, and abandon terms which are absurd, and would be ridiculous if they were not so common. I refer especially to the term shilling, which never had a place in our coinage, and was variable as a term of account in different localities during our colonial existence."

In portions of the United States where money of account shillings were not in use and U.S. copper coins were in circulation, pre-U.S. Mint coppers of the same general size as the U.S. cents must have circulated along with U.S. cents to some extent. In that situation such pre-U.S. Mint coppers would have to have circulated at a value of one cent each. Hard Times Tokens and store cards of the one cent size were similarly accepted as cent payment when they were introduced during and after the 1837 panic. Yet we do not know to what extent and which of the pre-U.S. Mint coppers might have been acceptable in cent transactions.

It is tantalizing not to know enough facts to determine on what basis pre-U.S. Mint coppers circulated in money of account areas and exactly where those areas were. The writer's conclusion is that we should assume tentatively that the number of such coppers per money of account shilling in the nineteenth century was the same as had been customary in normal periods of late eighteenth century circulation, namely:

18 coppers to the New England money of account shilling (108 to the dollar);

15 coppers to the middle Atlantic money of account shilling (112 1/2 to the dollar); and

14 coppers to the New York money of account shilling (112 to the dollar).

If these ratios had been more divergent, the movement of pre-U.S. Mint coppers from one money of account area to another would have been destabilizing and destructive. The public clung to and continued to circulate the pre-U.S. Mint coppers in money of account areas until the small Spanish-American silver coins were economically forced from circulation by the 1857 exchange legislation. Then the money of account systems and the pre-U.S. Mint coppers fell like dominoes and disappeared from calculations and circulation.

This subject has been researched by the writer for over 25 years

and has been discussed with Raymond H. Williamson who has kindly shared the relevant material in his research files. The challenge to locate further facts is open to other researchers who, it is hoped, will find more of the answers.

1. For circulation of coppers in eighteenth century America see: Eric P. Newman, "American Circulation of English and Bungtown Halfpence," *Studies on Money in Early America* (New York, 1976), pp. 134-72; Eric P. Newman, *Coinage for Colonial Virginia*, ANSNNM 135 (New York, 1956) pp. 33-34.

2. Eric P. Newman, *The Early Paper Money of America*(Racine, 1976), pp. 249-63.

3. Peter Force, ed., *American State Papers (Finance)*,Vol. 1, pp. 615, 632, 688 and 731; Albert Gallatin—Thomas Jefferson correspondence in the U.S. Archives; Don Taxay, *The U.S. Mint and Coinage* (New York, 1966), p. 67.

4. Neil Carothers, *Fractional Money* (New York, 1930), pp. 64, 72, 77 and 103; *American State Papers (Finance)*, Vol. 1, p. 603; Vol. 3, pp. 57, 674; Vol 5, pp. 226, 747; U.S. Statutes, Mar. 3, 1795, Section 9, and Jan. 18, 1837, Section 37.

5. Carothers, (above, n. 4), p. 84.

6. Carothers, (above, n. 4), p.102

7. Robert Holditch, *The Emigrants Guide to the United States of America* (London, 1818), p. 123.

8. Isaiah Thomas, *Almanac* (Worcester, various dates); Daniel Adams, *The Scholar's Arithmetic* (New England, various dates); Nicholas Pike, *A New and Complete System of Arithmetic* England, various dates).

9. *American Numismatical Manual* (Philadelphia, 1859), p. 105.

10. Sylvester S. Crosby, *The Early Coins of America* (Boston, 1875), p. 219.

11. *A Manual of Gold and Silver Coins* (Philadelphia, 1842), p. 141.

12. Dye, p. 200.

13. Editions of 1861 and 1864, p. 66.

14. "Coin in America," *Harpers New Monthly Magazine* (March 1860), p. 471.

15. From a scrapbook located by Raymond H. Williamson in the Archives of the Huntington Library, San Marino, California, and confirmed by The Pasadena Public Library to be from the *Pasadena Daily News* of July 29, 1898.

16. *The Numismatist* 1908, p. 324.

17. *The Numismatist*1908, p. 318.

18. *Numisgraphics* (New York, 1876), p. 66.

19. Felt, *An Historical Account of Massachusetts Currency* (Boston, 1839), p. 210.

20. *Dye's Gold and Silver Coin Chart Manual* (1851), p. 48; (1854), p. 48; (1855), p. 47. *T. W. Lord Supplement to the Cincinnati Counterfeit Detector* (March 1850), p. 24; (1854), p. 20. *Hodge's Gold and Silver Coin Chart Manual* (ca. 1857), p. 46; *Thompson's Coin Chart Manual* (1848), p. 36.